Effective October 13, 2022, coinciding with the start of fall respiratory season, the start of the annual influenza immunization campaign, and the availability of the COVID-19 bivalent vaccine which provides Omicron-specific protection against COVID-19 infection, the Ministry of Health launched the community respiratory illness surveillance program (CRISP).

This report provides Saskatchewan residents the most up-to-date surveillance data of respiratory virus activity in the province to inform their individual risk assessment. CRISP comprises a number of data-driven indicators of respiratory activity in Saskatchewan - COVID-19, influenza and other respiratory illnesses, including rhinovirus, respiratory syncytial virus (RSV), parainfluenza viruses 1-4 (PIV 1-4), adenovirus (ADV) and human metapneumovirus (HMPV).

Indicators available in CRISP include: indicators of viral transmission (case counts, test positivity, outbreaks, coinfections and variants circulating); sentinel indicators (emergency department visits, calls to HealthLine 811, wastewater reports); and outcome, health care capacity and immunization coverage indicators. Data is available for the province as a whole and select indicators by zone.

This report is a collaborative effort across health system partners in Saskatchewan, including the Ministry of Health, the Saskatchewan Health Authority (SHA), First Nations partners, wastewater researchers, individual clinicians submitting respiratory specimens for testing and the Roy Romanow Provincial Laboratory (RRPL), public health providers and the Ministry of Education.

Public posting of CRISP occurs every two weeks during respiratory virus season in Saskatchewan. www.saskatchewan.ca/COVID-19-cases
https://www.saskatchewan.ca/government/government-structure/ministries/health/other-reports/community-respiratory-illness-surveillance-program

The specific elements of the Community Respiratory Illness Surveillance Program (CRISP) as provided by system partners include:

- *Laboratory surveillance* – data provided by RRPL and includes tests performed at provincial laboratories and, Point-of-Care tests conducted in SHA facilities. Epidemiological analyses including number of cases and test positivity by week of specimen collection, age category, zone and etiological agent (COVID-19; Influenza; RSV; 'Other' respiratory viruses).
- *Sentinel Health Providers* – data provided by RRPL. Sentinel Health Providers comprise a geographical-based network in practices across the province who submit one to two specimens weekly to the Virology Section of RRPL from patients presenting with

respiratory-like symptoms. SHA Executive Directors of Primary Health Care are responsible for recruitment of SHA primary care providers representative of each health network in the province. Indigenous Services Canada and Northern Inter-Tribal Health Authority recruit Community Health Centers in First Nations communities to participate in the sentinel provider program. RRPL manages and analyzes the sentinel provider program data. Indicators reported by sentinel providers include: case counts; test positivity, and, most commonly detected respiratory pathogen by week and location.

- *Wastewater Markers* – data provided by the University of Saskatchewan and University of Regina Wastewater Teams. Currently in Saskatchewan, wastewater surveillance is conducted by two academic laboratories (USask and University of Regina). SARS-CoV-2 (the virus that causes COVID-19 disease) viral RNA load levels are detected by the academic labs for each of the wastewater treatment facilities they are in partnership with. The academic labs report weekly a calculated indicator of 'low', 'medium' and 'high' viral load detections, and, an overall trajectory (increasing, decreasing, no change) by treatment site for inclusion in CRISP.
- *Emergency Department Monitoring - Surveillance of Respiratory-like illness (RLI) from Emergency departments (EDs)* – data provided by participating SHA EDs and local public health services. As there is currently no centralized data capture source for ED admissions in the province SHA recruits EDs and sets up a mechanism for participating EDs to report to public health services in various ways – See Attachment 2-220a – Infectious Respiratory Illness Surveillance in Emergency Departments. Some public health offices aggregate raw data from their EDs on the prescribed data collection form and sends it to the Ministry of Health for overall provincial monitoring. FNIHB and NITHA will report to the local zone which the ED or health centre is located. This does not preclude monitoring in First Nations health care facilities. CRISP reports RLI ED visits per 1,000 provincially and by zone, where available. Note: this data flow may change effective 2023 with work proceeding on creating automated extracts from Sunrise Clinical Manager to improve representativeness, completeness, and accuracy of the surveillance data.
- *HealthLine 811 callers with Respiratory-Like Illness* – data provided by SHA HealthLine. This count of response protocols collected by HealthLine nurses is specific to callers reporting respiratory-like symptoms. HealthLine data is collected for a seven-day week, Monday to Sunday. Data is transformed into the rate of callers with respiratory symptoms from each Integrated Service Area (ISA) per 1,000 calls from that ISA concerning any type of symptom.
- *School illness absenteeism* – data provided by the Ministry of Education. This data includes a weekly count of registered students and the number of students absent due to illness by school. CRISP reports the proportion absent due to illness by zone and for the province as a whole.

- *Outbreaks* – data based on reports provided by local public health services. Defined as two or more lab confirmed respiratory virus cases in high-risk settings where transmission is evident or there is a high level of suspicion of transmission. Outbreaks are reported by the week they were reported to the local public health office and not necessarily in the week that the outbreak began. CRISP reports outbreaks in high risk settings where vulnerable populations reside such as long-term care facilities, personal care homes and group homes and by etiologic agent (Influenza, COVID-19 and 'other').
- *COVID-19 Hospitalizations* – data provided by SHA Digital Health. Defined as the number of COVID-19 (C-19) positive cases that during the surveillance week were admitted as an inpatient to an acute care facility in Saskatchewan. This includes patients with C-19 related illness, incidental COVID infection, and patients under investigation. COVID ICU admissions is the number of C-19 positive cases that during the surveillance week were admitted to an ICU location in SK. This includes both infectious and non-infectious cases. Co-infected Cases = if positive for Influenza and RSV or, positive for Influenza and Other Respiratory viruses or, positive for RSV and Other respiratory viruses or, positive for COVID-19 and Influenza or, positive for Covid-19 and RSV or, positive for Covid-19 and Other Respiratory viruses.
- *Influenza, RSV and 'other' hospitalizations* - data provided by SHA Digital Health through a data linkage of RRPL lab-confirmed data to the Admissions, Discharges and Transfers database. Delays in testing results affect the total number of Influenza, RSV and other respiratory virus admissions for a particular day. This lag in data has the greatest impact on the two days prior to when the report is updated. Counts include individuals who are laboratory positive for influenza, RSV, and other respiratory viruses, within four days prior to date of admission AND/OR at any point during the hospital stay. Co-infected Cases = if positive for Influenza and RSV or, positive for Influenza and Other Respiratory viruses or, positive for RSV and Other respiratory viruses or, positive forCOVID-19 and Influenza or, positive for COVID-19 and RSV or, positive for COVID-19 and Other Respiratory viruses.
- *Percentage of staffed inpatient beds occupied by COVID patients* - data provided by SHA Digital Health. Weekly average COVID Occupancy is a 7-Day average percentage of acute inpatient beds staffed and in operation COVID positive patients occupy.)
- *Deaths* of individuals due to COVID-19 and Influenza – data provided by public health services based on reports received from physicians, coroners or prescribed practitioners (nurse practitioners) responsible for completing the Medical Certificate of Death. Includes deaths entered into Panorama IOM among laboratory-confirmed cases. Deaths are reported based on the actual date of death.